



Alkemist Labs Verified Botanical Reference Material by HPTLC Fingerprint - Certificate of Authenticity

Botanical Nomenclature:	<i>Silybum marianum</i> (L.) Gaertn. [Asteraceae]	Analysis by:	N. Afendikova, K. Montoya, N. Alvarez, J. Mares, L. Tang, K. Tran
Common name:	Milk Thistle	Method:	BTM-75-0529
Plant Part:	Seed		

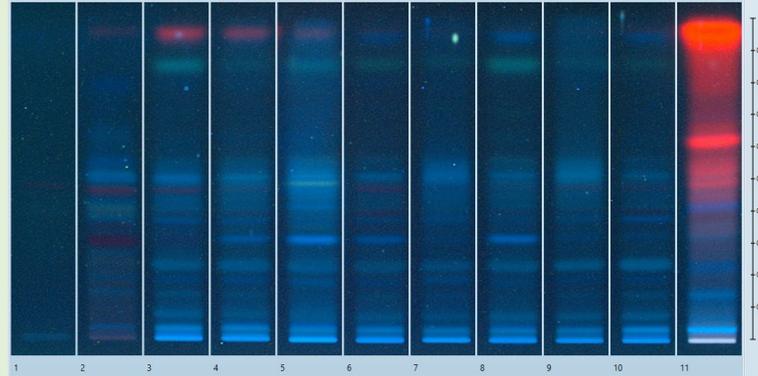


Plate Image 1: Developed, UV 366 nm

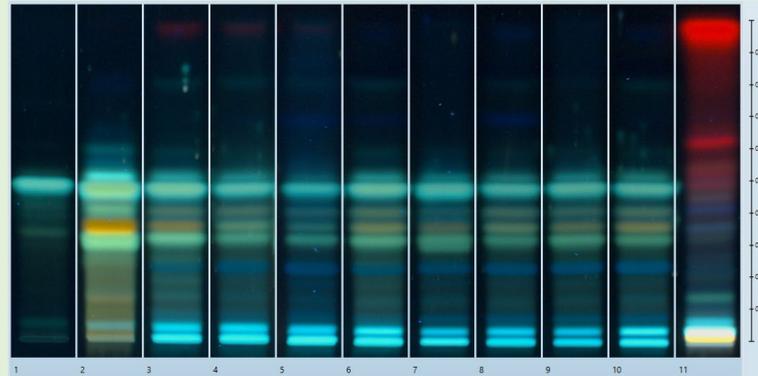


Plate Image 2: Derivatized with Natural Products and Polyethylene Glycol Reagent, UV 366 nm

Plate Images 1-2 Track Assignment

Track	Sample	Part	Sample#	µL
1	Silybins - A & B	N/A	N/A	3
2	<i>Silybum marianum</i>	Seed	Lot # 0100537401	0.5
3	<i>Silybum marianum</i>	Seed	19224LMG	3
4	<i>Silybum marianum</i>	Seed	W06304CHR1	3
5	<i>Silybum marianum</i>	Seed	W35609PRF2	3
6	<i>Silybum marianum</i>	Seed	W11115MBS1	3
7	<i>Silybum marianum</i>	Seed	W11115MRH1	3
8	<i>Silybum marianum</i>	Seed	W11315PB1	3
9	<i>Silybum marianum</i>	Seed	W02616CRB	3
10	<i>Silybum marianum</i>	Seed	W15915HH1	3
11	<i>Silybum marianum</i>	Leaf	W28914HH1	3

Method Testing Parameters

Sample Preparation:
 0.3g+3mL 95% grain Ethanol, sonicate/heat at 50° C for 30 min.
Mobile Phase:
 Dichloromethane/Acetone/Formic Acid (7.5/1.65/0.85; v/v/v)
Derivatization Reagents:
Natural Products:
 2.5 g 2-aminoethyl diphenylborinate in 250 mL Methanol
Polyethylene Glycol:
 12.5 g Polyethylene Glycol 4000 in 250 mL Ethanol

Comments and Conclusions: The extracted sample solution in track 2 shows a fingerprint similar to the extracted botanical reference material solutions of *Silybum marianum* seed (tracks 3, 4, 5, 6, 7, 8, 9, 10) with respect to number, position, color and intensity of bands. Additional zones of varying intensities are present as well as the absence of zones. The above conclusion may be a function of the natural variance found in botanicals. The growing and drying conditions, age, seasonal variations, geographic location, etc. all play a role in the phytochemical fingerprint of botanicals as well as their extracts; hence, chromatographic variations are expected. **This test sample Lot # 0100537401 (Lane 2) has characteristics of a customized extract derived from *Silybum marianum* seed.**

ISO/IEC 17025



CERTIFICATE #3851.01

Analyzed by: Khanh Tran
 Examined, Reviewed & Authorized by: Sidney Sudberg, Chief Scientific Officer

Report Date: 07/28/23

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